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EFFECT OF WEIGHT LOSS ON VENTRICULAR REPOLARIZATION: A META-ANALYSIS OF CLINICAL STUDIES

Moderated Poster Contributions
Arrhythmias and Clinical EP Moderated Poster Theater, Poster Hall B1
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Authors: *Jad Omran, Belal Firwana, Ashraf Al-Dadah, Martin Alpert, University of Missouri Hospital and Clinics, Columbia, MO, USA*

Background: Prior studies have described an association between obesity and both prolongation of the QTc interval (QTc) and increased QT or QTc dispersion (QTd). Some have documented improvement in ventricular repolarization with weight loss. This meta-analysis assesses the effect of weight loss on QTc and QTd in obese subjects.

Methods: A comprehensive literature search was conducted with the electronic databases MEDLINE, EMBASE and the Cochrane Central Register of Controlled Trials (CENTRAL) to identify studies investigating QTc, QTd and weight loss. Three independent reviewers selected studies and extracted data. Fixed-effects meta-analysis model was used to pool outcomes across studies calculating mean difference (MD) for both QTc and QTd with 95% confidence interval (CI) as the measure of effect before and after weight loss. Units were measured in milliseconds.

Results: Twelve studies met the inclusion criteria enrolling 1082 patients. Patient demographics included weight, weight loss modality, baseline QTc and baseline QTd. Weight loss in obese subjects, either via diet and exercise or bariatric surgery was accompanied by a significant decrease in QTc with a mean difference of 24.08 milliseconds (95% CI: -26.63 to -21.54). QTd was also significantly decreased with weight reduction by a mean difference of 14.12 milliseconds (95% CI -16.22 to -12.01).

Conclusion: Weight loss in obese subjects produces a significant decrease in both QTc and QTd. This suggests that weight loss is capable of improving ventricular repolarization in obese patients.